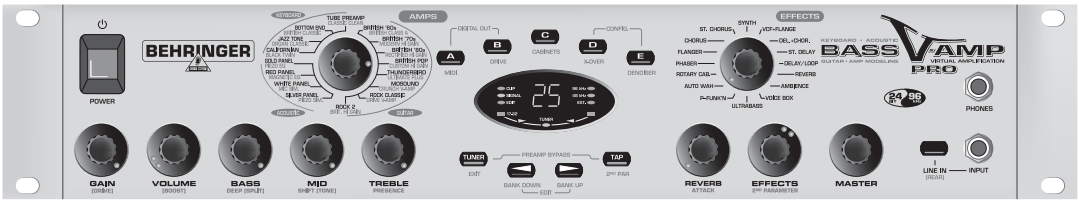
BASS V-AMP / BASS V-AMP PRO

ENGLISH

User's Manual

Version 1.0 December 2002

BASS V-AMP



BASS V-AMP PRO

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JUST LISTEN.

SAFETY PRECAUTIONS

CAUTION: To reduce the risk of electric shock, do not remove the cover (or back). No user serviceable parts inside; refer servicing to qualified personnel.

WARNING: To reduce the risk of fire or electric shock, do not expose this device to rain and moisture.

This symbol, wherever it appears, alerts you to the presence of uninsulated dangerous voltage inside the enclosure—voltage that may be sufficient to constitute a risk of shock.

This symbol, wherever it appears, alerts you to important operating and maintenance instructions in the accompanying literature. Please read the manual.

DETAILED SAFETY INSTRUCTIONS:

All the safety and operation instructions should be read before the device is operated.

Retain Instructions:
The safety and operating instructions should be retained for future reference.

Heed Warnings:
All warnings on the device and in the operating instructions should be adhered to.

Follow instructions:
All operation and user instructions should be followed.

Water and Moisture:
The device should not be used near water (e.g. near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, near a swimming pool etc.).

Ventilation:
The device should be situated so that its location or position does not interfere with its proper ventilation. For example, the device should not be placed on a bed, sofa, rug, or similar surface that may block the ventilation openings, or used in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.

Heat:
The device should be situated away from heat sources such as radiators, heat registers, stoves, or other devices (including amplifiers) that produce heat.

Power Source:
The device should only be connected to a power supply of the type described in the operating instructions or on the device.

Grounding or Polarization:
This device must be grounded.

Power Cords:
Power cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords and plugs, sockets, outlets and the point where they exit from the device.

Cleaning:
The device should be cleaned only as recommended by the manufacturer.

Non-use Periods:
The power cord of the device should be unplugged from the outlet when left unused for a long period of time.

Debris and Liquid Entry:
Debris and/or liquids should be kept from entering the enclosure through openings.

Damage Requiring Service:
The device should be serviced by qualified service personnel when:

- The power cord or the plug has been damaged; or
- Debris or liquid has entered the device; or
- The device has been exposed to rain; or
- The device does not appear to operate normally or exhibits a marked change in performance; or
- The device has been dropped, or the enclosure damaged.

Servicing:
The user should not attempt to service the device beyond that which is described in the operating instructions. All other servicing should be referred to qualified service personnel.

BASS V-AMP/BASS V-AMP PRO

The Ultimate Tone Toolbox for Bass, Acoustic/Electric Guitar and Keyboard Amp Modeling

- ▲ 32 unsurpassed authentic amp models: 16 classic bass amps, 8 of the best V-AMP amp models, 4 typical keyboard amps and 4 acoustic models
- ▲ 23 renowned cabinet simulations: from traditional to contemporary sounds with original character—from 1 x 8" to 8 x 10", all the way to 18" speakers
- ▲ 16 absolutely first-class effects, e.g. Ultrabass, 3-Voice Synth, Delay/Loop Sampler, Chorus, Flanger, Rotary Speaker, Voice Box, Wah Wah as well as various combinations—may be used without amp simulation as well!
- ▲ 4 renowned distortion and overdrive stomp boxes with adjustable DRIVE, TONE, BOOST and SPLIT functions
- ▲ 125 outstanding presets in 25 banks, easily editable and storable
- ▲ Independent compressor and efficient denoiser
- ▲ Integrated, auto-chromatic tuner (can be calibrated) for easy tuning of bass guitars and other electronic instruments
- ▲ Extensive MIDI implementation for control/automation of all MIDI functions
- ▲ BASS V-AMP: Adjustable stereo aux input for mixing line-level signals (e.g. CD player, sound card etc.)
- ▲ BASS V-AMP: Gig bag and footswitch (for switching presets and activating the tuner) included
- ▲ BASS V-AMP PRO: AES/EBU and S/PDIF outputs and adjustable wordclock input for synchronization with 24-bit and 32 - 96 kHz
- ▲ BASS V-AMP PRO: Balanced stereo XLR DI output with ground/lift switch and ULTRA-G speaker simulation
- ▲ BASS V-AMP PRO: Pre DSP and post DSP effects loops for connecting external effects processors
- ▲ Extremely rugged construction guarantees outstanding dependability, even under harsh conditions
- ▲ Manufactured under ISO9000 certified management system

BASS V-AMP/BASS V-AMP PRO

FOREWORD

Dear Customer,

welcome to the team of BEHRINGER users, and thank you very much for expressing your confidence in us by purchasing the BASS V-AMP/ BASS V-AMP PRO. Writing this foreword for you gives me great pleasure, because it represents the culmination of many months of hard work delivered by our engineering team to achieve a very ambitious goal: to present two outstanding virtual bass amplifiers, whose advanced sound capabilities and remarkable features offer a maximum of flexibility and performance.

The task of designing our new BASS V-AMP/BASS V-AMP PRO certainly meant a great deal of responsibility, which we assumed by focusing on you, the discerning user and musician. Meeting your expectations also meant a lot of work and night shifts. But it was fun, too. Developing a product usually brings a lot of people together, and what a great feeling it is when all who participated in such a project can be proud of what they've achieved.

It is our philosophy to share our enjoyment with you, because you are the most important member of the BEHRINGER team. With your highly competent suggestions for new products you've made a significant contribution to shaping our company and making it successful. In return, we guarantee you uncompromising quality as well as excellent technical and audio properties at an extremely reasonable price. All of this will enable you to give free rein to your creativity without being hampered by budget constraints.

We are often asked how we manage to produce such high-quality devices at such unbelievably low prices. The answer is quite simple: it's you, our customers! Many satisfied customers mean large sales volumes enabling us to get better purchasing terms for components, etc. Isn't it only fair to pass this benefit on to you? Because we know that your success is our success too!

I would like to thank all of you who have made the BASS V-AMP/ BASS V-AMP PRO possible. You have all made your own personal contributions, from the developers to the many other employees at this company, and to you, the BEHRINGER user.

My friends, it's been worth the effort!

Thank you very much,

Uli Behringer

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WARNING!

☞ **We would like to bring your attention to the fact that extremely loud sound levels may damage your hearing as well as your headphones. Please lower all OUTPUT LEVEL knobs all the way to the left before powering up the unit.**

1. INTRODUCTION

Congratulations! By purchasing the BASS V-AMP/ BASS V-AMP PRO, you have selected a modern virtual bass amplifier that sets new standards in the world of bass preamps. Our primary goal was to achieve the classic sound of bass amps by using "Physical Modeling" and implementing the newest DSP effects. Following the tremendous success of our V-AMP and its successor V-AMP 2, with the BASS V-AMP/ BASS V-AMP PRO we are finally able to offer bass players the same diversity of sound.

However, we went a step further and expanded the cocept to include items of interest to keyboarders and electric/acoustic guitar players. Those who have already used the V-AMP or the V-AMP 2 will appreciate the BASS V-AMP/BASS V-AMP PRO as a terrific improvement.

We wanted to create two devices that would stirr conversations in years to come: the BASS V-AMP/BASS V-AMP PRO is universally usable and offers authentic amp and even speaker sounds—all this without having to transport heavy equipment! Additionally, the most modern multi-effects processors assure unprecedented tonal freedom. In short, the BASS V-AMP/ BASS V-AMP PRO gives you a "sound machine" sporting the hottest features of the day.

Future EPROM updates will make sure your BASS V-AMP/ BASS V-AMP PRO always has the latest software and features.

BEHRINGER is a company in the field of professional audio studio technology. We have been successfully developing products for live and studio applications for years. Among those are microphones and 19" gear of all kinds (compressors, enhancers, noise gates, tube processors, headphone amplifiers, digital effects units etc.), monitoring and PA loudspeakers as well as professional live and recording mixing consoles. Our entire technical know-how has gone into creating your BASS V-AMP/BASS V-AMP PRO.

To top it all, we worked together with professional bass players, whose sound suggestions led to the creation of original artist presets. Just a single glance at the separate preset sheet will be enough to completely amaze you.

Flexibility is what matters most in the music industry. Bass players should be able to offer a wide array of different sounds, and should also be able to temporarily adjust to the demands of home recording, studio and live applications. Bulky amp combinations are out of sync with today's times precisely because of this reason. The BASS V-AMP/BASS V-AMP PRO offers you a maximum set of features in a compact unit that can be figured out in no time.

But enough talking: Nothing will convince you more than the shear joy of what you will hear and feel the first time you play with your BASS V-AMP/BASS V-AMP PRO. You will experience a latest-generation virtual bass amplifier with fascinating features:

- Extreme sound variety and flexible output routing options for bass players
- Multi effects, amp and loudspeaker simulations for keyboard players
- Remarkably clean, high-gain sound and acoustic simulations for electric guitars
- Sound enhancer for acoustic guitar sound pickup
- Uncompromising loop/sampler function, super-phat analog bass synth and the best distortion pedal simulations.

1.1 Before you get started

The BASS V-AMP/BASS V-AMP PRO was carefully packed at the assembly plant to assure its secure transport. Should the condition of the cardboard box suggest that damage may have taken place, please inspect the unit immediately and look for physical indications of damage.

☞ **Damaged units should NEVER be sent directly to us. Please inform the dealer from whom you acquired the unit immediately as well as the transportation company from which you took delivery. Otherwise, all claims for replacement/repair may be rendered invalid.**

Please make sure the unit is provided with sufficient ventilation, and never place the BASS V-AMP/BASS V-AMP PRO on top of an amplifier or in the vicinity of a heater to avoid the risk of overheating.

☞ **Before plugging the unit into a power socket, please make sure you have selected the correct voltage!**

Power is supplied via the cable included with the unit. All requiered safety precautions have been adhered to. When you hook up your BASS V-AMP/BASS V-AMP PRO to the mains, the unit is automatically turned on.

☞ **Please make sure that the unit is grounded at all times. For your own protection, you should never tamper with the grounding of the cable or the unit itself.**

MIDI connections (IN, OUT/THRU) use standard DIN plug-in connectors. Data transfer takes place via the dry-contact optical couplers. Additional information can be found in chapter 8 ("INSTALLATION").

1.1.1 Serial number

The serial number of your BASS V-AMP/BASS V-AMP PRO is located on the back. Please send the completely filled out registration card within 14 days of purchase to assure unproblematic warranty processing in the future. Or use our online registration form at www.behringer.com.

2. CONTROL ELEMENTS

An illustration of all control elements is located on the separate sheet included with this user's manual. The controls on both devices are numbered the same way. How the two versions differ is clearly marked by using the designations "BASS V-AMP only" or "BASS V-AMP PRO only." Connections on both versions are covered in a separate chapter in this user's manual.

2.1 Unit top/front side

[1] Turn your BASS V-AMP PRO on using the *POWER* switch. The POWER switch should always be in the "Off" position (depressed) whenever you first connect the unit to the mains.

☞ **Please note: Merely switching the unit off does not mean that it is fully disconnected from the mains (BASS V-AMP PRO only). When not using the unit for prolonged periods of time, please unplug the unit's power cord from the wall.**

[2] The *GAIN* control determines level and saturation characteristics of the amp simulation.

[3] The *VOLUME* control governs the volume of the selected preset.

[4] The *BASS* control on the EQ section lowers or elevates bass frequencies.

☞ **When the *TAP* button [11] is depressed, the BASS control changes its function to DEEP control, which influences the sound in the lower frequency segment.**

[5] The *MID* control lowers or elevates the mid frequencies.

☞ **MID-SHIFT/SHAPE: When you select an amp simulation using the AMPS control, press the TAP button to use the MID control to adjust the mid frequency range (SHIFT). With amp simulations that don't originally have such a function, pressing the TAP button as described above activates the BEHRINGER SHAPE filter instead.**

[6] The *TREBLE* control regulates the upper frequency range of an activated preset.

☞ **Pressing the TAP button [11] changes the function of the TREBLE control to PRESENCE control. This enables lowering/elevating upper frequency range values of a filter selected for the amp model active at this time. This filter simulates the frequency-dependent coupling of tube amps.**

☞ **Please pay attention to the special functions (described under [8]) of the following points: [2], [3] and [5]!**

[7] The *AMPS* control lets you select one of the 32 amp simulations. 16 LEDs surround this control, whereby 1 LED is assigned to 2 amp types. You select one of the first 16 amp types (white lettering) by simply turning the control.

To select the next 16 amps (17 - 32, grey lettering), keep the TAP button pressed as you turn the AMPS control.

☞ **The "17 - 32" LED in the lower left corner of the DISPLAY lights up when one of the amp simulations numbered 17 - 32 is selected.**

Additionally, you have the option to activate a PREAMP BYPASS via the TUNER [9] and TAP [11] key combination. When PREAMP BYPASS feature is activated, no AMPS control LED is on. To disengage the PREAMP BYPASS feature, either select an amp model of your choice or press the TUNER and TAP keys again.

[8] These five keys are used (among other things) for preset selection of the presets bank shown in the display.

In EDIT mode (activated by simultaneously pressing the arrow keys described under [10]), the function of individual keys is indicated by the print located directly above the respective button:

▲ **A**: Activates the *MIDI* function. By utilizing the arrow keys, the MIDI channel used for sending and receiving (1 to 16) can be set up.

After selecting a MIDI function via the A key, pressing the TAP key relays the MIDI out connector to MIDI Thru. When in this mode, the unit sends no MIDI information of its own; instead, it merely passes on the data received at the MIDI In.

▲ **B**: Switches the *DRIVE* function on and off. When DRIVE is enabled, the controls [2], [3] and [5] take up the following functions:

- GAIN regulates the distortion degree ("**DRIVE**").
- The VOLUME control regulates an additional volume control ("**BOOST**").
- Use the MID control like the tone control on a simulated distortion pedal ("**TONE**").

Well-known floor effects units are simulated with these setups.

☞ **When the DRIVE function is activated, turning the EFFECTS MIX controls lets you also set up the Wah-Wah. The LEDs surrounding the EFFECTS MIX control show the position of the pedal. When the LED is not on, the Wah-Wah is inactive.**

☞ **When the Auto Wah/P-Funk'n is activated, the Wah-Wah cannot be used.**

▲ **C**: This key activates the *CABINETS* mode. Use the arrow keys to select a type of loudspeaker or a combination of loudspeakers. You can also completely switch off the speaker simulation ("-"). Additional information is available in chapter 5.2.

▲ **D**: Activates the *X-OVER* function. Use the arrows to regulate the cut-off frequency between high-pass and low-pass filter. This is done in 50 gradients (please also see chapter 6.3).

▲ **E**: Activates the *DENOISER* function. You may change the threshold of the expander by using the arrow keys. The EFFECTS control regulates the sensitivity of the noise reduction system, while pressing TAP changes the function of the EFFECTS control so that it regulates the frequency range of the noise reduction system (also see ch. 5.3).

☞ **After preset editing, press the TUNER/EXIT button to quit (the EDIT MODE LED dies out).**

☞ **DIGITAL OUT: The digital output on the BASS V-AMP PRO can be configured by simultaneously pressing buttons A and B. The display shows "SP" for S/PDIF or "AE" for AES/EBU format. Alternating between the two formats is done by using the TAP key. The LEDs let you see the respective sample rate (internal synchronization and sampling rates of 44.1, 48 or 96 kHz or external wordclock synchronization; see table 2.1). To select the most appropriate sampling rate for the receiving unit, please use the arrow keys. Press the TUNER/EXIT key to quit.**

☞ **CONFIGURATION: By simultaneously pressing the D and E keys on your BASS V-AMP PRO, you can select the global operating mode (keys B and D on your BASS V-AMP), so that an adjustment to diverse studio and live situations is possible (see chapter 3). Please press the TUNER/EXIT key to quit.**

[9] The *TUNER* key engages the tuner. Additionally, you can exit the EDIT mode by pressing this key (see chapter 7).

[10] Both arrow keys are used to select the next preset bank (*BANK DOWN* und *BANK UP*). Keeping the keys pressed lets you quickly jump through the preset banks. Pressing both arrow keys at the same time engages the EDIT mode. When you press one of the A - E buttons ([8]) afterwards, each arrow key takes over an edit function.

[11] The *TAP* key has eight functions:

▲ **"Tap":** Tap the TAP key in the rhythm of a tune, and the selected effect adjusts automatically to the appropriate speed.

▲ **"Deep":** By keeping the TAP key pressed, the BASS control assumes the function of a DEEP control, so that it regulates the sound in the deep bass end of the spectrum.

▲ **"Mid-Shift/Shape":** When an amp simulation is selected using the AMPS control, keep the TAP key pressed and use the MID control to regulate the middle portion of the frequency range (SHIFT).

Our BEHRINGER SHAPE filter is automatically activated with amp simulations that do not have such a function (as described above) in the original.

▲ **"Presence":** Keep the TAP key pressed to use the TREBLE control to regulate PRESENCE in a particular amp simulation.

▲ **"2nd parameter":** The second effect parameter (regulated by the EFFECTS control) is accessed by keeping the TAP button pressed (see chapter 6).

▲ **"Amp models 17 - 32":** Keep the TAP key pressed and select the desired simulation by using the AMPS control.

▲ **"MIDI Thru":** The MIDI Out connector can be set to MIDI Thru (see [8] A).

▲ **"Compressor":** The compressor control regulates the attack time when the TAP key is kept pressed (see [14]**).**

[12] *DISPLAY* shows the selected effects bank and gives information about the changes occurring while editing. When the tuner is enabled, the display shows the tuning of the connected instrument. When one of the amp simulations numbered 17 - 32 is selected, the LED located in the lower left corner of the DISPLAY lights up.

The display on the BASS V-AMP PRO gives additional information about the digital format and the sample rate of the unit, and indicates that the BASS V-AMP PRO should be synchronized to an external wordclock signal. Connected input signals are displayed with the green SIGNAL LED; distorted signals are marked with the red CLIP LED.

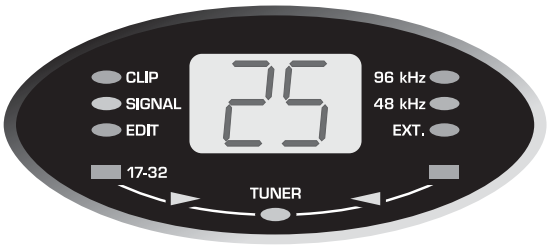

Fig. 2.1: BASS V-AMP PRO display

Clock	LED ext.	LED 48 kHz	LED 96 kHz
internal 44.1 kHz	-	-	-
internal 48 kHz	-	✓	-
internal 96 kHz	-	-	✓
external (any frequency)	✓	-	-

Tab. 2.1: Output formats and LED allocation in the diplay (BASS V-AMP PRO only)

[13] The *EFFECTS* control lets you select an effects preset or a combination of several effects. This continuously turnable control is surrounded by a circle of 16 LEDs. Each effect has a corresponding LED.

[14] The *COMPRESSOR* control lets you compress or limit your sound. When you turn the COMPRESSOR control as far left as possible without triggering off a LED, the dynamic characteristics of the signal are not changed. The compressor on the BASS V-AMP/BASS V-AMP PRO controls two important functions:

▲ You set the compression sensitivity by turning the COMPRESSOR control. The more you turn the control, the more pronounced the compression. When the last LED lights up while turning the control to the right, the effect acts as a limiter.

▲ Turning the COMPRESSOR control while keeping the TAP key pressed lets you set the attack parameter of the compressor.

☞ **More detailed information about how a compressor works can be found in chapter 5.3.**

[15] When an effect is selected using the EFFECTS control [13], the proportion with which this effect influences the entire sound is regulated using the *EFFECTS MIX* control. As long as no LED lights up while turning the control leftwards, no effect is mixed in. This is also called an effect bypass, and mutes all effects accross the board.

☞ **When the TAP key is kept pressed, a second effects parameter can be regulated using the EFFECTS control (see tables 6.1 and 6.2).**

[16] The *MASTER* control regulates the overall volume of your BASS V-AMP/BASS V-AMP PRO.

☞ **In addition to the AUX LEVEL control on the BASS V-AMP, this is the only non-programmable control of the BASS V-AMP/BASS V-AMP PRO. All additional controls are infinitely turnable, and their positions can be saved in a preset.**

☞ **The LED circles surrounding the VOLUME, BASS, MID, TREBLE, GAIN, EFFECTS MIX and COMPRESSOR controls each have nine LEDs. Either one LED or two adjacent LEDs light up in each LED circle at any one time. This occurs when the control is in an in-between position. This way, a total of 17 positions can be displayed.**

[17] The connector labeled *INPUT* is the 1/4" TS jack input of the BASS V-AMP/BASS V-AMP PRO, which is where an electric bass, an acoustic guitar, a keyboard etc. can be connected. Use a common 1/4" mono jack cable for this purpose.

[18] The *LINE IN* switch regulates which signal source of the BASS V-AMP PRO is processed. When the switch is not pressed, this refers to the the signal connected to the input connector (e.g. electric bass). When the switch is depressed, the line signal connected to the PRE DSP INSERT (LINE IN, [20]) is routed to the processor (particularly useful for keyboards).

[19] You can connect standard headphones to the *PHONES* connector of your BASS V-AMP/BASS V-AMP PRO.

☞ **When headphones are connected to your BASS V-AMP/ BASS V-AMP PRO, studio mode 1 (S1) is automatically activated. If you opted not to select a loudspeaker type in your setup and then connect a set of headphones, your BASS V-AMP/BASS V-AMP PRO automatically selects a speaker simulation. This improves the subjective listening impression while using headphones. To look up which speaker simulation is paired to which amp, please see table 5.1. However, you can deactivate a simulation while listening to headphones by selecting "-" in CABINETS mode. Conversely, it is possible to freely select the global output configuration when a set of headphones is connected, so that you can for example check the effect various modes have on your sound.**

2.2 Rear panel of the BASS V-AMP PRO

[20] You can insert external effects into the serial insert loop featured on the BASS V-AMP PRO. The *SEND/LINE OUT* connector is connected to the input of your effects unit for this purpose. The SEND/LINE OUT output is tapped into directly before the digital signal processor (PRE DSP). This connector is therefore ideal for recording "dry" signals (i.e. without the effects portion).

Please connect the *RETURN/LINE IN* connector with the output of your external effects processor or recorder.

☞ **When using the serial insert loop, please make sure that your effects processor is not set to 100% effect signal ("wet"), because otherwise the direct signal is missing.**

☞ **Pressing the LINE IN switch [18] routes the signal connected to the RETURN/LINE IN connector to your BASS V-AMP PRO. This function may be of use when for example listening to a "dry" recording of a guitar signal on your BASS V-AMP PRO before running it through the effects.**

[21] The stereo signal of the BASS V-AMP PRO without analog speaker simulations can be taken at the *ANALOG LINE OUTPUTS*. For example, this is how you connect an external stage amp when performing live.

[22] The *POST DSP INSERT RETURN (IN)* stereo jack pair is used for connecting to the outputs of your external stereo effects processor. The signal taken at the POST DSP SEND (OUT) outputs [25] is brought back into these jacks.

[23] The ground connection on the DI OUT outputs [24] can be interrupted with the *GROUND LIFT* switch. This way, rumble noise and ground loops can be avoided. The ground

connection is interrupted when the switch is depressed (LIFT).

24 The balanced stereo signal of your BASS V-AMP PRO can be taken at the *DI OUT*. This output should be connected to two balanced channel inputs on your mixing console. The signal level is set at +4 dBu in studio modes and at -10 dBu for live modes.

25 The connection to the inputs of an external stereo effects unit can be made using the *POST DSP SEND (OUT)* stereo output. The signal present at this output is identical to the signal at the digital outputs. In contrast to the SEND/LINE OUT connector 20, the signal is POST DSP here. In case both of the respective RETURN (IN) connectors 22 are not in use, the identical signal can be taken at the ANALOG LINE OUTPUTS 21.

26 BASS V-AMP PRO's signal can be digitally taken at the *S/PDIF* output.

27 The digital output signal of the BASS V-AMP PRO in AES/EBU format is found at the *AES/EBU* output (XLR connector), provided AES/EBU has been selected as output signal format (please adhere to the second note under 8 E).

28 Devices used to externally synchronize your BASS V-AMP PRO should be connected at the *WORDCLOCK* connector. This is a high-impedance connector, meaning that it has no internal terminal resistor (75 Ohm).

29 This is the *MIDI OUT/THRU* connector of the BASS V-AMP PRO. The connector is preconfigured in the MIDI Out setting at the assembly plant, but it can be switched to MIDI Thru (see 8 A).

30 A MIDI foot pedal, for example the BEHRINGER MIDI FOOT CONTROLLER FCB1010, can be connected at the *MIDI IN* connector. Please also read chapter 8.4.

31 *SERIAL NUMBER*. Please send the completely filled out warranty card within 14 days of purchase to us, as warranty claims may otherwise be rendered invalid. Or register online at www.behringer.com.

32 *FUSE RETAINER/VOLTAGE SELECTOR*. Please make sure that the voltage indicated in the voltage selector maches the local voltage before you connect the unit to the mains. Always replace blown fuses with fuses of the same type. Some units feature a fuse retainer in which a selection between 230 V and 120 V is possible. Please beware: When using your unit outside of Europe on 120 V, a higher fuse rate is required (see chapter 8 "INSTALLATION").

33 Power is supplied via an *IEC* connector. The matching cable is provided with the unit.

2.3 BASS V-AMP connectors (side)

21 The stereo output signal of your BASS V-AMP can be taken at the balanced *LINE OUT* connectors.

29 This is the *MIDI OUT/THRU* connector of the BASS V-AMP. The connector is configured to MIDI Out at the assembly plant, but it can be reconfigured to MIDI Thru (see 8 A).

30 A MIDI foot pedal (e.g. the BEHRINGER MIDI FOOT CONTROLLER FCB1010) can be connected to the *MIDI IN* connector. More on this subject in chapter 8.4.

33 Connect the power supply unit via the *AC IN* connector. When you plug the power supply unit in the mains, your BASS V-AMP is automatically switched on.

34 Connect the stereo jack of your footswitch FS112V to the *FOOTSWITCH* connector. This will enable you to alternate between different presets within a preset bank. When you keep the DOWN button on the footswitch pressed for longer than two seconds, this automatically powers up the tuner. Doing the same again alternately turns the tuner off.

35 The volume of the signal fed into the AUX IN input is adjusted by using the *AUX LEVEL* control.

36 By using the *AUX IN* jack input, you can feed an additional stereo signal into your BASS V-AMP. This way, you can play along to a drum computer or a playback.

3. APPLICATION EXAMPLES/ OPERATION MODES

To optimally adapt your BASS V-AMP/BASS V-AMP PRO to various studio and/or live situations, you may choose between six different operating modes (CONFIGURATION, keys B and D in the case of BASS V-AMP as well as keys D and E in the case of BASS V-AMP PRO). These operating modes function independently from the settings already selected on the unit itself (i.e. how the output signal of your BASS V-AMP/ BASS V-AMP PRO is taken). This way, the left and the right output signals can be used entirely differently. The table on the following page explains in full detail how you can tap into the signal at the output of your BASS V-AMP/BASS V-AMP PRO with or without a speaker simulation/EQ. Additionally, the effects signal at the output does not necessarily have to be identical for both sides (see table 3.1).

3.1 Selecting an operating mode (CONFIGURATION)

Your BASS V-AMP/BASS V-AMP PRO is set to studio 1 (S1) operating mode when it leaves the assembly plant. To change this setting, select the CONFIGURATION mode. Please press the B and D keys at the same time (BASS V-AMP) or D and E (BASS V-AMP PRO). By using the arrow keys, you select between different operating modes. To exit this mode, press TUNER once.

Various operating modes are described on the following pages in greater detail. To adjust the output level of your instrument, use a specific level control located at the beginning of the signal path. This way, it is possible to adjust the input sensitivity by +12/-6 dB (middle value = 0 dB): Please select the CONFIGURATION mode and adjust the desired sensitivity level by keeping the TAP key pressed and turning the GAIN control.

☞ **A change in input gain has an effect on <u>all</u> presets. Therefore, use it with caution to allow for example an adjustment to instruments with strongly varying signal levels.**

3.2 Standard setup

To use your BASS V-AMP/BASS V-AMP PRO at the practice room, connect the unit as described in fig. 1.4. and 2.3 of the included appendix. Instead of a bass, you can of course connect other musical instruments. Connect your headphones to the PHONES connector. By using the FS112V footswitch delivered with your BASS V-AMP/BASS V-AMP PRO, you can alternate between the five presets contained in a preset bank, or you can power up the tuner.

Live modes L1 and L2 featured in figures 1.4, 1.5 and 2.4 are particularly well suited for more demanding live or practice room applications. By using a MIDI foot controller (fig. 1.4 and 2.5), you can alternate between different presets, banks and amps, the tuner etc. An additional stereo signal can be fed into your BASS V-AMP/BASS V-AMP PRO at the aux in (see fig. 1.3 and 1.5).

Naturally, your BASS V-AMP/BASS V-AMP PRO is in its best shape when its bass parts are immortalized on an analog or digital recording medium. Its advantages are most apparent when used in recording situations. Your BASS V-AMP/BASS V-AMP PRO gives you unsurpassed flexibility because you can simply take it with you into the control room and forget all about having to use speakers. This way, you have the best control of the sound of your BASS V-AMP/BASS V-AMP PRO at all times.

If you realize that you have to change the signal on the mixing console, you can work with the tone engineer on your sound so

<table>
<tr><th rowspan="2">Operation mode</th><th colspan="2">BASS V-AMP</th><th colspan="2">BASS V-AMP PRO</th></tr>
<tr><th>OUTPUTS L</th><th>OUTPUTS R</th><th>OUTPUTS L</th><th>OUTPUTS R</th></tr>
<tr><td>Studio 1 (S1)</td><td colspan="2">Stereo operation with the selected effects and speaker simulations</td><td colspan="2">Stereo operation with the selected effects and speaker simulations</td></tr>
<tr><td>Studio 2 (S2)</td><td>Amp w/out FX + Cab Sim</td><td>Amp, Cab Sim + FX</td><td>Amp w/out FX + Cab Sim</td><td>Amp, Cab Sim + FX</td></tr>
<tr><td rowspan="2">Studio 3 (S3)</td><td rowspan="2">Amp, Cab Sim + FX</td><td rowspan="2">DI Out (unprocessed direct signal)</td><td colspan="2">XLR/Phones: ULTRA-G active (digital Cab Sim out)</td></tr>
<tr><td>Amp w/out FX</td><td>Amp + FX</td></tr>
<tr><td>Live 1 (L1)</td><td colspan="2">Stereo operation: Live EQ, Amp, Cab Sim und FX</td><td colspan="2">Stereo operation: Live EQ, Amp, Cab Sim and FX</td></tr>
<tr><td rowspan="2">Live 2 (L2)</td><td colspan="2">Bi-Amping mode w/out Cabinet Simulation</td><td colspan="2">Bi-Amping mode w/out Cabinet Simulation XLR/PHONES: ULTRA-G active</td></tr>
<tr><td>HP: Live EQ, Amp, FX</td><td>LP: without effects</td><td>HP: Live EQ, Amp, FX</td><td>LP: w/out effect section</td></tr>
<tr><td>Live 3 (L3)</td><td>For Amp with Live EQ w/out Cab Sim</td><td>For Amp w/out Live EQ with Cab Sim</td><td colspan="2">XLR/Phones: ULTRA-G active (digital Cab Sim out) Stereo: Amp, FX + Live EQ</td></tr>
</table>

Tab. 3.1: Operating modes of the BASS V-AMP/BASS V-AMP PRO with application examples

that the recording is done optimally, capturing your sound the way you want it. Simply put: no annoying back-and-forth trips between studio and control room.

3.3 Recording situation

Depending on the recording situation and the desired effect, all studio modes come into play (S1, S2 und S3). While S1 carries the complete signal (including all amps, speakers and effects simulations) in stereo, S2 produces two mono signals, whereby the right output contains the signals with all the simulations, while the left output without the effects. A typical home recording setup is shown in fig. 1.3.

S3 serves the purpose of recording a fully unprocessed signal (right output) and still hear it with all the effects applied (left output). Since the BASS V-AMP PRO has an additional PRE DSP INSERT, this operating mode (known as “Re-Amping”) is possible in every output mode (see fig. 2.5 and 2.6). Figure 2.6 describes the possibility of recording the direct signal via an analog sound card input *and* simultaneously recording the completely processed signal. Should the sound of your mix require reworking, you don’t have to bring the signal in again, since the direct signal is still available.

In the case of the BASS V-AMP PRO, you can directly feed a digital mixing console (our BEHRINGER DDX3216 in this illustration). The unit can be externally synchronized via worldclock (fig. 2.5).

3.4 Live setup with a connection to an external bass amplifier

The BASS V-AMP/BASS V-AMP PRO is naturally in top form when it is used as a preamp in connection with an external bass amplifer. In the case of the BASS V-AMP, it is advisable to connect your bass amp via the L/AMP OUT output, while the R/DI OUT output is used to connect to the mixing console or the stage box (fig. 1.6 and 2.3). Connecting the BASS V-AMP PRO to a mixing console should be done via the ULTRA-G DI OUT output.

The advantage of this application: You are ultra-flexible, since you can set up the necessary monitor volume/tone needed for the stage directly on the external bass amplifier, and at the same time utilize the various sound options of the BASS V-AMP/ BASS V-AMP PRO. When you use the R/DI output of the BASS V-AMP to control your mixing console, the front mix benefits from the unique sound achieved by the BASS V-AMP, which is optimized for P.A. applications by virtue of utilizing the equalizer in the channel strip of the mixing console.

☞ **In the case of the BASS V-AMP, selecting studio 3 (S3) and connecting Line Out R with Aux In L lets you bring the direct signal in addition to the output signal by using the aux control.**

☞ **When you connect line out L with aux in R (plug plugged in half-way) in S3 mode, you can add the direct signal to the effect signal.**

☞ **<u>Avoid</u> connecting line out L to aux in L as well as line out R and aux in R, as feedback may occur.**

4. PRESETS OF THE BASS V-AMP/ BASS V-AMP PRO

The BASS V-AMP/BASS V-AMP PRO features 125 rewritable presets, divided into 25 banks. Therefore, there are five presets per preset bank. Each preset consists of a maximum of five “ingredients”:

- ▲ the simulation of an amplifier (incl. GAIN, EQ and VOLUME settings),
- ▲ the loudspeaker simulation,
- ▲ a “pre-amp” effect (e.g. Denoiser, Auto Wah, Wah Wah),
- ▲ a “post-amp” multi effect (e.g. stereo delay, modulation effect or a combination of both) and
- ▲ the compressor setting.

An overview of all presets of your BASS V-AMP/ BASS V-AMP PRO is included with this user’s manual.

4.1 Recalling presets

The most recently used preset is automatically recalled each time you power the unit on. The following example in fig. 4.1 shows the BASS V-AMP: preset D in the 25th bank was selected.

In this case you can press the keys A, B, C or E to recall a different preset of the same preset bank. You can select a different preset bank by pressing either one of the two arrow keys.

The display of the BASS V-AMP/BASS V-AMP PRO always shows which preset bank is selected. To recall a preset after selecting a different preset bank, press one of the A - E keys. Which preset from the respective bank is currectly active is always displayed in the key LED.

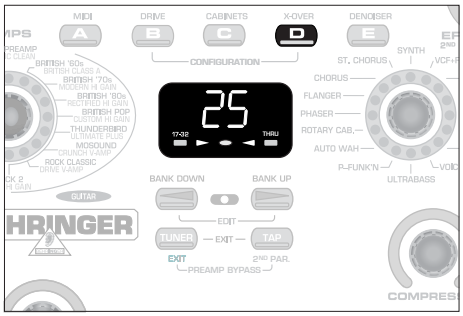

Fig. 4.1: Recalling presets

4.2 Editing presets

Editing presets on your BASS V-AMP/BASS V-AMP PRO is simple and quick to do. You can for example recall a preset in order to modify it. To do so, select a desired amp model by turning the AMPS control to the desired amp model. The preset key LED flashes (for example, D) and signals that you have edited a preset.

Now, modify the settings of the VOLUME, BASS, MID, TREBLE and GAIN controls. After having selected the desired effect by using the EFFECTS control, you can modify its part of the entire sound by using the EFFECTS MIX control.

To get into the EDIT mode, press both arrow keys simultaneously. By using the keys B - E, you can activate the DRIVE, CABINETS, X-OVER and DENOISER functions respectively. You can then edit these functions by using the arrow keys, and the respective parameters will be shown in the display. To leave EDIT mode again, briefly press the TUNER key.

By turning the TREBLE control while the TAP key is pressed, you can lower or increase an additional filter in the upper frequency range (PRESENCE). This simulates the frequency-dependant decoupling of tube amps.

☞ **With the exception of Compressor und Auto Wah, there is a speed parameter present in all multi-effects. Let's say you want to adjust respective effects according to the tempo of your playback. Tap the TAP key twice in the tempo of your playback and the tempo of the effect is automatically matched to the tempo of your musical piece.**

4.3 Saving user presets

To save your edits, keep the desired preset key pressed for roughly two seconds. This will overwrite the previous settings (the key LED lights constantly again).

☞ **Of course, you don't have to necessarily save your preset in the location of the previously selected preset. To save your preset elsewhere, press the arrow keys (BANK UP and BANK DOWN) to get to the desired preset bank. Then, you can save your preset by keeping the desired preset key pressed for roughly two seconds. For example, you can edit a preset located in preset bank five and location D and save it in bank six and location A.**

4.4 Overriding edits/Restoring single factory presets

You can of course undo an edit of a preset. Let's say, you selected preset C and edited it (key LED is blinking), but then you want to revert to the previously saved configuration: Simply select a different preset. Each time you recall a different preset, unsaved edits from the current edit are lost. However, keeping both arrow keys pressed after editing for so long until "Pr" appears in the display recalls the factory preset that was originally at this location. To activate this factory preset, you still have to save it again by keeping the respective preset button for roughly two seconds.

4.5 Restoring all factory presets

To restore all factory presets, do the following: keep keys D and E pressed and only then power up your BASS V-AMP/BASS V-AMP PRO. "CL" is shown in the display. Now, let go of the D and E keys and simultaneously press both arrow keys. This procedure overwrites all presets that you may have created and restores all factory presets. How to save your presets before restoring factory presets is explained under 8.4.1.

5. AMP/SPEAKER SIMULATION

The heart and soul of your BASS V-AMP/BASS V-AMP PRO are its amp/speaker simulations. 32 simulation models can enormously ease the work at your home recording studio, because you avoid having to mic an amp. With your BASS V-AMP/BASS V-AMP PRO, you are in the position to simply choose an amp that once wrote history, regardless of whether we are talking funk, blues, heavy metal or any other musical style. Moreover, you can freely modify the sound of the amp of your choosing and virtually wire it up to one of the 23 simulated speaker types ("cabinets"). Last but not least, you can enable a digital effect and a preferred degree of compression for your virtual amp (see chapter 4, "BASS V-AMP/BASS V-AMP PRO PRESETS").

Powering up your BASS V-AMP/BASS V-AMP PRO automatically loads the preset you used most recently. The LED circle surrounding the AMPS control shows which amp is currently selected: its respective LED is on. By turning the control, you can select a different amp. To change the basic parameters of the sound signal, use the VOLUME, BASS, MID, TREBLE and GAIN controls. When the TAP key is pressed, the TREBLE control assumes the function of lowering/increasing the PRESENCE filter in the upper frequency range (see 6).

As a rule, you first select an amp, then a cabinet and finally an effect.

How to save your changes is described in chapter 4. To get a better overview of the rich choice of amp simulations of the BASS V-AMP/BASS V-AMP PRO, read the descriptions of various amp types in the section below.

☞ **When you select an amp simulation, a matching speaker simulation is automatically selected (see table 5.1). Otherwise, the authenticity of the sound could suffer from a poorly selected speaker, particularly when you use headphones. Of course, you can select other cabinet simulations for the respective amp type depending on your personal preferences.**

5.1 Amp descriptions

BASS AMPS

BRITISH '60s: A '68 Marshall Super Bass Plexi with Vintage EL-34 tubes was the role model for this simulation. This amp has richer highs than the Marshall Major and sounds a bit like a fuzz box in the upper drive settings. This amp was a must in the '60s, particularly among UK bands. For example, it was used by John Entwhistle (The Who), Noel Redding (The Jimi Hendrix Experience), Ron Wood (Jeff Beck Group) and Roger Glover (Deep Purple).

BRITISH '70s: This virtual amp is based on the '69 Marshall Major. It's a classic among tube amps, and was used by Jack Bruce, among others. The sound remains warm even in high drive settings, and gets a natural-sounding distortion characteristic, commonly found on old Cream records.

BRITISH '80s: A sound coined in the '80s by musicians such as Trace Elliot or Mark King from Level 42. It's a very transparent and "wirily" sound that produced a lot of pressure.

BRITISH POP: Created using the Vox AC-100 as a model. This amp was very "in" in the '60s because it had a memorable bass foundation while still leaving enough playroom in the highs. The AC-100 had one very unique feature: the bass control worked the wrong way around! Turning the control to the left meant elevating the bass frequencies. Since this feature takes some time to get used to, we stuck to the more conventional solution, so that turning the control leftward lowers the bass frequencies and turning the control rightward elevates them.

THUNDERBIRD: This simulation leans in the direction of smaller bass combos, similar to the BEHRINGER THUNDERBIRD BX108, hence the designation. The result is a full and warm sound that forgives minor playing impreciseness.

MOSOUND: No other amp was used more often in Motown recordings as this one: the Ampeg B-15. The list of artists who used the typical B-15 bass sound looks like "Who's Who in Motown": The Supremes, The Four Tops, The Temptations, Marvin Gaye and Stevie Wonder to mention just a few.

ROCK CLASSIC: A little quiz question: what's the name of the bass amp that has been manufactured for the past 30 years, without modifications, and is still as popular as ever? Correct: it is the Ampeg SVT Classic—a true power package. With its 300 Watts of raw tube power, this amp has been indispensible to rock bass players for years. Among others, Van Halen and the Rolling Stones use this amp.

ROCK 2: Here we have the next stage in the development of the SVT CLASSIC: SVT PRO II. With this model you can use a graphic EQ, which was a feature that made this amp well liked among hard rock and heavy metal bands. But pop-rock combos like those of Bruce Springsteen and David Lee Roth use it often.

SILVER PANEL: This simulation reproduces the '67 Fender Bassman—it's an amp from the legendary "Silverface" series. Shortly after its introduction it became many a bass player's absolute darling. Paul McCartney used the Bassman on the later Beatles albums and also used it on his first solo album with the Wings.

WHITE PANEL: What would the '80s be without their typical bass sound? This decade was hugely influenced by the sound of Gallien/Krueger bass amps. Some liked the authentic reproduction of transistor-powered amps; others yearned for the warmth, for that special something that was missing. Whatever the case: the Gallien/Krueger was in the early '80s, along with Trace Elliot, the amp of choice. Therefore, we chose the WHITE PANEL as the model for the 800RB, as it is popular even today, and used by the likes of Flea (Red Hot Chilli Peppers).

RED PANEL: The relatively young company by the name of SWR started creating the so-called "L. A.-Sound" in the mid '80s. The decisive factor was the combination of tubes (preamp) and transistors (power amp). Since then, the SWR amps belong surely to the most demanded amps on the market. The SWR SM-400 was used as a model for RED PANEL—it's a 500-Watt mono head that finds its home in many bass racks due to its rich tone possibilities.

GOLD PANEL: This is a simulation of the Eden Traveller WT-300. This amp got its name from its developer: David Eden. He proved his engineering prowice at SWR before starting to design bass amps of his own. Eden amps became famous through their typically crystal-clear and powerful sound.

CALIFORNIAN: Toward the end of the '80s Mesa Boogie presented the 400+. This amp's head is extremely easy to navigate, and features four preamp tubes and twelwe amp tubes, delivering a massive 500 Watts of power.

JAZZ TONE: This amp, with its typical Marcus Miller sound, has a classic amp as its role model: the Polytone A101. It's a 15" speaker bass combo. If you're yearning for a jazzy sound, this is the right amp for the occasion.

BOTTOM END: How times change: nowadays, almost all current music productions feature a markedly deep bass sound that could previously only be achieved on a synth. But to preserve "true" liveliness, it is advantageous to bring in an electric bass. Only then can you have authentic dead notes and a percussive way of playing. A bass player who became very popular thanks to his ultra-deep bass sound is Justin Meldal-Johnsen. He played for Beck and Tori Amos, among others. But hip hop, trance and rave musicians will find this sound just right.

TUBE PREAMP: Sound engineers discovered the appeal of a tube very early on. They use tubes to endow sound sources of all kinds with warmth. You can modify not only the sound of a bass, but can for example also run a vocal signal through you BASS V-AMP/BASS V-AMP PRO and polish it with the TUBE PREAMP. (This amp model is however best suited to instill more life into your bass guitar.)

GUITAR

BRITISH CLASS A: Created by using the Vox AC 30 as a role model. The roots of this amp go all the way back to the sixties. Back then, bass players demanded sound with a brilliant characteristic, which Vox engineers addressed by including "revolutionary" bass and treble controls. Brian May and U2 guitarist The Edge are the most famous users of this amp.

MODERN HI GAIN: In this case, sound controls take a back seat to distortion, giving the extremely distorted sound more strength. The sound of MODERN HI GAIN is ideal for grunge guitarists, but also finds its appeal among the guitarists such as Steve Vai and Joe Satriani. Steve Lukathar, Nuno Bettencourt, Steve Vai and others made the Soldano sound famous. When using a Gibson Les Paul, MODERN HI GAIN sounds at its best when the volume control on the guitar itself is somewhat supressed.

RECTIFIED HI GAIN: This amp's role model was a 1994 Mesa Boogie Dual Rectifier Trem-O-Verb. Its modern, high-gain-oriented sound marks this amp, and it works very well when playing in a band. Sound control takes place post distortion, which makes a "post-treatment" of distorted sounds possible. The amp works optimally for heavy metal, but also for achieving Steve Lukather sounds. The most famous user of this amp is Dream Theater's guitarist John Petrucci.

CUSTOM HI GAIN: This sound originates in the sound of a '69 50-Watt Marshall Plexi Pate modified by Jose Arrendondo. Arrendondo was Eddie Van Halen's guitar tech. The amp is characterized by its great mids and the ability to obtain the ultimate gain without blurring the sound. Attention: addictive!

ULTIMATE PLUS: Those to whom DRIVE V-AMP (see below) is not enough will find more gain than they could ever ask for.

CRUNCH V-AMP: This amp is ideally suited for modern blues or jazz sounds: its sound is neither too low-key nor too intrusive.

DRIVE V-AMP: This is a modern high gain lead amp. It produces a soft but still formidable sound with a lot of drive, therefore ideal for a lead guitar. The role model was the Mesa Boogie Mark III.

BRIT. HI GAIN: Compare this model with a Marshall JCM 800. Even though the original caused a furry mostly due to its distorted sound, this model produces a similar effect even with moderate gain. You get excellent Steve Ray Vaughan/Michael Landau sounds. When distorting, it is ideal for producing the old Gary Moore sound as well as heavy metal sound.

ACOUSTIC

PIEZO SIM: Simulates a piezo pick up. This way, sound with an acoustic character is created. Electric guitars get this accoustic

touch, but without the feedback typical for acoustic instruments.

MIC SIM: A guitar with steel strings mic'd with a dynamic microphone is simulated here. While piezo pickups have the tendency to make the sound rather hard, using a mic makes the sound much more evened-out. Of course, the feedback typical for micing acoustic instruments is no longer an issue.

MAGNETIC EQ: Magnetic pick ups are very common in western guitars because they can easily be mounted into the instrument's cavity. However, the sound produced is not so clear as with piezo systems or with mics, because only the vibrations of the strings are captured in the signal. This amp model corrects the tone quality of a magnetic pick up system and gives it an acoustic character.

☞ **A discreet ambience effect lets your instrumet sound more "natural".**

PIEZO EQ: The sound character of the instrument is presented a bit more harshly. The EQ corrects the sound so that the end result sounds like it was directly recorded using a mic.

KEYBOARD

BLACK TWIN: A Fender Blackface Twin from the year 1965 was the role model used for this simulation. In the '60s, this amp was used by jazz, country and even rock musicians. Its appeal was in that it was exceptionally loud, so it was primarily used in live situations. You can drive your Blackface Twin extremely loud, but the distortion remains moderate even as you increase the volume. Try using it with the sound of a Rhodes electric piano sound or another electric piano.

ORGAN CLASSIC: Here we have a simulation of a Leslie 760 amp that strongly influenced the classical Hammond sound. During the analysis of this system, we noticed distortions that partly spring from the organ tube end amp and partly from a Leslie. Both characteristics can be controlled with a gain control the same they would be controlled by using a Hammond volume pedal. This sound and the rotary cabinet effect make a Rhodes electric piano sound amazing, a clavinet sound absolutely cool, analog synth sounds (Moog) get even better, and an electric bass and even drum sounds get nicely elevated.

☞ **You can dynamically steer the GAIN control via MIDI by using a foot controller board, such as the BEHRINGER MIDI FOOT CONTROLLER FCB1010. This way, you get even closer to the original sound.**

BRITISH CLASSIC: This amp model, created by leaning closely to a '59 Marshall Plexi 100-Watt amp, is particularly well suited for creating clean sounds. The amp was used by Jimi Hendrix, Eric Clapton and Jeff Beck. This amp model is therefore located among the keyboard models because you can create the organ sound influenced by John Lord (Deep Purple).

CLASSIC CLEAN: In the '80s, the chorus effect of a Roland JC-120 was the trademark of Buzzy Feiten (Dave Weckl Band guitarist). What makes this solid-state amp special is the brilliance of its sound, noticable in every mix. It is also outstanding for the new wave sound of the '80s that's making a come-back. Not to forget its popularity with Fender Rhodes pianists live on the stage with a Yamaha CP70 or a Wurlitzer electric piano.

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5.2 Speaker descriptions

The sound of a bass combo depends a great deal on the speaker type and combination. We saw a lot of experimentation in this field in the past 50 years. The goal was to figure out which speakers are most suited for reproducing bass sounds and how the sound changes when you combine a particular speaker with other speaker types.

Among other things, the character of a speaker is determined by its power rating, impedance, sound pressure level and its size. Also, never underestimate the importance of the material(s) used to build it. Over the years, using a 15" speaker together with a 4 x 10" speaker became standard-issue for electric bass applications.

This combination produced a healthy bass foundation and at the same time ensured perceptible highs. The sound was also balanced and not too strained, which was often the case with 15" speakers used alone. Nowadays, in bass cabinets you can find almost all speaker sizes you can think of: 8", 10", 12", 15" or 18". Even HF drivers are no longer a rarity in bass cabinets.

☞ **When you select an amp simulation, a matching speaker simulation is automatically activated as well (see table 5.1). Otherwise, the authenticity of the sound could be jeopardized, particularly when you use headphones. Of course, you can alter these settings depending on personal preferences.**

A list of speaker/cabinet simulations can be found in the following section.

Amps 1 - 16 (white)	Amp #	Cabinet simulation (default setting)	Cab #
BRITISH '60s	0	68 Marshall 4x12"	6
BRITISH '70s	1	68 Marshall 4x12"	6
BRITISH '80s	2	Trace Elliot 4x10"	2
BRITISH POP	3	Voc AC100 2x15"	9
THUNDERBIRD	4	1x8" Tweed	16
MOSOUND	5	Ampeg B15 1x15" Closed Back Combo	7
ROCK CLASSIC	6	Ampeg SVT 8x10" '79	1
ROCK 2	7	Ampeg SVT 8x10" '79	1
SILVER PANEL	8	Fender Bassman 2x15" with JBLs	11
WHITE PANEL	9	6x10" SWR Goliath Senior	3
RED PANEL	10	6x10" SWR Goliath Senior	3
GOLD PANEL	11	Ampeg 4x10"	4
CALIFORNIAN	12	Mesa/Boogie 2x15"	10
JAZZ TONE	13	Polytone A101, 1x15" Closed Back Combo	8
BOTTOM END	14	Ampeg SVT 18E, 1x18"	14
TUBE PREAMP	15	No Cabinet-Simulation	-
Amps 17 - 32 (grey)	**Amp #**	**Cabinet simulation (default setting)**	**Cab #**
BRITISH CLASS A	16	2x12" Twin Combo	18
MODERN HI GAIN	17	4x12" V-AMP Custom	23
RECTIFIED HIGH GAIN	18	4x12" Vintage 30	20
CUSTOM HI GAIN	19	4x12" '78 Std.	21
ULTIMATE PLUS	20	4x12" V-AMP Custom	23
CRUNCH V-AMP	21	4x12" '78 Std.	21
DRIVE V-AMP	22	4x12" Vintage 30	20
BRIT. HIGH GAIN	23	4x12" '78 Std.	21
PIEZO SIM.	24	No Cabinet-Simulation	-
MIC. SIM.	25	No Cabinet-Simulation	-
MAGNETIC EQ	26	No Cabinet-Simulation	-
PIEZO EQ	27	No Cabinet-Simulation	-
BLACK TWIN	28	2x12" Twin Combo	18
ORGAN CLASSIC	29	Leslie 760 Cabinet, 1x15"+HF Horn	12
BRITISH CLASSIC	30	4x12" '78 Std.	21
CLASSIC CLEAN	31	2x12" V-AMP Custom	19
PREAMP BYPASS	32	No Cabinet-Simulation	-

Tab. 5.1: Assignment of cabinet simulations to amp models

Cabinet simulations	
-	BYPASS (NO SPEAKER SIMULATION)
1	AMPEG SVT 8 x 10" '97
2	TRACE ELLIOT 4 x 10"
3	SWR GOLIATH 4 x 10"
4	AMPEG 4 x 10"
5	GALLIEN KRUEGER B120
6	68 MARSHALL 4 x 12"
7	AMPEG B15 1 x 15" CLOSED BACK COMBO
8	POLYTONE A101 1 x 15" CLOSED BACK COMBO
9	VOX AC100 2 x 15"
10	MESA/BOOGIE 2 x 15"
11	FENDER BASSMAN 2 x 15" WITH JBLs
12	LESLIE 760 CABINET, 1 x 15" + HF-DRIVER
13	SWR 1 x 18"
14	AMPEG SVT 18E, 1 x 18"
15	SUNN COLISEUM 1 x 18" + 1 x 12"
16	1 x 8" TWEED
17	1x 12" MID
18	2 x 12" TWIN COMBO
19	2 x 12" V-AMP CUSTOM
20	4 x 12" VINTAGE 30
21	4 x 12" '78 STD.
22	4 x 12" OFF AXIS
23	4 x 12" V-AMP CUSTOM

Tab. 5.2: Overview of cabinet simulations

5.3 Denoiser and compressor

DENOISER: A Denoiser is used to remove or minimize noise or other interference sounds. Such noise becomes particularly apparent during pauses. The time-proven BEHRINGER denoiser removes or reduces such noise very effectively.

A dynamic low-pass filter eliminates the noise present in the signal, while the integrated expander supresses noise during pauses. Concerning this dynamic filter you can adjust frequency range and sensitivity, while the expander adjusts both the threshold and the time parameter.

☞ **The BASS V-AMP/BASS V-AMP PRO's denoiser can be used independently from the integrated multi-effects processor. See chapter 2.1 (8 E) for information about using the denoiser.**

COMPRESSOR: A compressor is used to elevate low-level signals, whereas loud parts are lowered if needed.

Letting the compressor kick in strongly (done by turning the EFFECTS control clockwise) tightens the entire dynamic of the signal. This dynamic effect is the one that is most used in a connection with an electric bass. On the other hand, a limiter cuts off the signal above a set threshold to prevent distortion.

☞ **BASS V-AMP/BASS V-AMP PRO's compressor can always be activated independently from the integrated multi-effects processor.**

6. EFFECTS PROCESSOR

The integrated multi-effects processor is a distinctive feature of your BASS V-AMP/BASS V-AMP PRO. This effects module offers you 16 different groups of first-class effects, such as chorus, flanger, stereo delay, rotary cab., synth as well as various combination effects. Additionally, you can use an extra wah wah effect via the MIDI function. This can be optimized by using a MIDI foot controller with an expression pedal, for example the BEHRINGER MIDI FOOT CONTROLLER FCB1010.

☞ **The multi-effects processor functions basically in stereo. This way, you can use stereo effects for recording purposes via the LINE OUT on the BASS V-AMP or via the ANALOG LINE OUTPUT on the BASS V-AMP PRO. You can also use a second amp to play in stereo (also see table 3.1).**

The effects can be edited in three parameters:

1. By rotating the EFFECTS control.

2. By rotating the EFFECTS control while the TAP key is pressed.

3. By pressing the TAP key in the beat of a music piece. Table 6.1 shows the effects parameters of your BASS V-AMP/ BASS V-AMP PRO.

☞ **To adapt beat-based effects to your musical program, press the TAP key twice in the beat of the music.**

6.1 Pre-amp effects

Effect no.	PRE FX	EFFECTS Controller 48	EFFECTS + TAP button Controller 49	MIDI 1 Controller 50
0	MIDI WAH	-	-	-
1	P-FUNK'N	Depth	Sensitivity	Base frequency
2	AUTO WAH	Depth	Sensitivity	Base frequency

Tab. 6.2: Pre FX

MIDI WAH: The legendary wah wah was primarlily made famous by Jimi Hedrix. Explaining it would be surely more difficult than simply telling you to go listen Hendrix' *Voodoo Chile*. When the DRIVE function is activated, turning the EFFECTS control sets the wah wah. The LED circle around the control displays the position of the pedal. When no LED is on, the MIDI wah wah is not active.

P-FUNK'N: This is our attempt at replicating the legendary MuTron III, and we succeeded! The MuTron III was a mixture out of Auto wah wah and filter effect. The most famous user of this effect is probably Bootsy Collins. The MuTron III had an up/down switch. Here, the effect resembles the MuTron in the down position.

AUTO WAH: The American funk in the '70s proved that auto wah had many possible applications. Instead of regulating the filter frequency with your foot, our effect does this automatically, depending on the signal level. In doing so, our effect is similar to the MuTron III in the up position.

☞ **Wah wah is not available when auto wah or P-Funk'n are being used.**

6.2 (OVER)DRIVE simulations

Our overdrive simulations offer you a selection of classic stomp box effects. Just like with the originals, you can set up drive, tone and boost (see 8 B). The split function (4) lets you set up an independent crossover (pre distortion pedal). This crossover lets the high frequencies pass through without distortion. (left position = off (bypass)/left to right: 41 - 600 Hz). The illustration displays the frequency range.

Effect no.	POST FX	EFFECTS Controller 40	EFFECTS + TAP button Controller 41	TAP button Controller 46	MIDI 1 Controller 42	MIDI 2 Controller 43	MIDI 3 Controller 44	MIDI 4 Controller 45
1	VCF + FLANGER	VCF Mix	Flanger Mix	VCF Speed	Speed/Depth	Flanger Feedback	VCF Frequency	VCF Q
2	DELAY + CHORUS	Delay Mix	Chorus Mix	Delay Time	Feedback	Feedback LP	Speed/Depth	Delay Time
3	STEREO DELAY	Delay Mix	Feedback	Delay Time	-	Feedback LP	-	Delay Time
4	DELAY / LOOP	Delay Mix	Feedback	Delay Time	-	-	-	-
5	REVERB	Reverb Mix	Decay	-	Damping	Diffusion	-	-
6	AMBIENCE	Ambience	Decay	-	Size	-	-	-
7	VOICE BOX	Mix	Vowel	Speed	Pedal	-	-	-
8	ULTRABASS	SubMix	Sensitivity	-	-	-	-	-
9	ROTARY CAB.	Mix	Balance	Speed	Split Frequency	-	-	-
10	PHASER	Mix	Feedback	Speed	Feedback LP	Stereo Spread	-	-
11	FLANGER	Mix	Speed/Depth	-	Intensity	-	-	-
12	CHORUS	Mix	Speed/Depth	-	Intensity	-	-	-
13	STEREO CHORUS	Mix	Speed/Depth	-	Intensity	-	-	-
14	SYNTH	Synth Mix	Variation	-	-	Interval	Key	-
15	MIDI SYNTH	Synth Mix	Variation	-	-	-	Reverb	-

Tab. 6.1: Post FX and MIDI controller

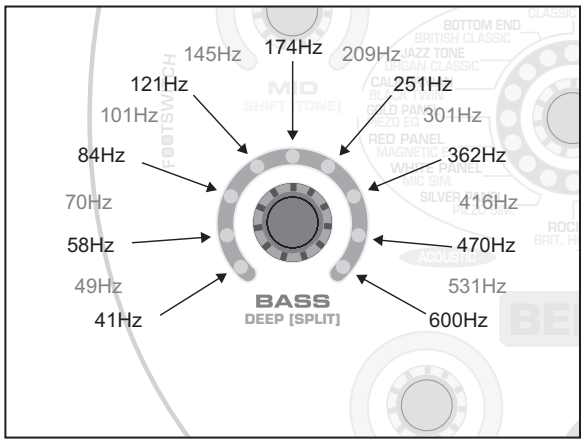

Fig. 6.1: SPLIT steps

6.3 Post-amp effects

The post-amp effects described in the following paragraphs are located post amp and cabinet simulations in the signal chain. An integrated crossover determines at what frequency the effects start working and regulates the bass information when the unit is used without effects. The cut-off frequency of this 18 dB/octave Butterworth crossover is regulated in EDIT mode under X-OVER. The display shows the frequency divided by factor 10. Adjustments are made by using the bank UP/DOWN keys. If the display shows "-", the crossover is not activated and the complete signal is affected by the effects. When, for example, "8" is shown in the display, this means that frequencies under 80 Hz remain unaffected by the effects.

Volume balance between the high pass and the low pass can be adjusted when you are setting up the crossover settings by using the EFFECTS control (all the way to the left = low pass signal only, all the way to the right = high pass signal only).

6.3.1 Reverb and delay algorithms

DELAY+CHORUS: This algorithm combines a delay and the ever-popular chorus effect.

ST. DELAY: A delay of the input signal. Different tempo settings enable you to produce interesting delay effects. This way, you can quickly create repititions—particularly with "slapping"—that wouldn't even be possible without a delay.

DELAY/LOOP: This function allows you to jam along with your own signal. To do that, record with the delay/loop effect a short sequence (max. 15.36 sec.). This sequence can be played back in an endless loop. You can for example use this loop as a foundation for your melody and improvise around it. To record this sequence via MIDI, send the respective MIDI controller (see chapter 10). When you use this function without MIDI, the delay can last a maximum of 1023 ms.

REVERB: The reverb is still the most important effect in a mixdown or during a live event. A reverb is used to add ambience to an otherwise "dry" sound.

AMBIENCE: This effect simulates a room without reflexions.

6.3.2 Modulation effects

PHASER: The phaser functions according to the principle that a second, phase-shifted signal is added to the original signal. This way, the signal seems thicker and livelier. This effect was originally used for guitar sounds and keyboards. In the '70s, it started being used for other instruments as well (e. g. electric piano and electric bass).

FLANGER: A flanger modulates the tone pitch of a signal upwards and downwards at a constant tempo.

(STEREO) CHORUS: This effect subtly detunes the original signal. This way, a pleasant effect is created in combination with a tone pitch variation. This effect is particularly well-suited to lend a warm characteristic to the bass sound. Additionally, when "popping" occurs, it can make the tone sound less intrusive and harsh.

6.3.3 Special effects

VCF+FLANGER: The combination of filter and flanger effect.

VOICE BOX: This vocal simulation fades between various vowels (a/e, a/i, a/o etc.) by using a LFO (Low-Frequency Oscillator). You can control this effect via a MIDI foot controller.

ULTRABASS: A very low bass sound that lies an entire octave beneath the lowest bass frequency present in the mix is currently very popular. However, this sound can often only be created at the studio because most bass amplifiers have no subharmonic function. The ULTRABASS processor, which has also found home in various BEHRINGER bass amps, makes creating this effect a no-brainer. You will be amazed how ultra-low the sounds created with the ULTRABASS function are.

6.3.4 Virtual analog bass synth

SYNTH: This effect gives you a rad three-voice synthie bass and has many parameters that are pre-configured in 9 variants and can be selected via TAP and EFFECT. The TAP key can be used to control the envelope (ADSR) of the synthie sounds (short tap = short tone, slow tapping = long tone). Additionally, there is an "intelligent" envelope follower based on key and interval, whereas the VCO 1 (Voltage Controlled Oscillator) is set up for specific intervals, and the BASS V-AMP/BASS V-AMP PRO produces bass overtones that match the particular key. The EFFECTS control regulates the ratio between the bass synthie and the bass signal with all amp and cabinet combinations.

MIDI SYNTH: The absolute highlight of your BASS V-AMP/ BASS V-AMP PRO is our MIDI SYNTH: With 40 parameters (already described), it offers you the best possible sound. You get a virtual analog MIDI synthesizer equipped with powerful features. It is ideal for hardware and software sequencers, keyboards and for live applications. By using the EFFECTS control, you can mix the completely modelled instrument signal (EFFECT min. = modelled instrument signal only , EFFECT max. = bass synth only).

We equipped the MIDI synthesizer with a complete reverb section as an additional feature. Of course, you can access this section via MIDI.

ROTARY CAB.: A simulation of a classic organ effect that is normally achieved with a terribly heavy casing and slowly or quickly rotating speakers. The physical principle of the Doppler effect is used to modulate the signal.

7. TUNER

The integrated tuner is activated by pressing the TUNER key.

7.1 Tuning instruments

The chromatic tuner automatically recognizes the frequencies of all the standard bass notes. When you connect your instrument to the BASS V-AMP/BASS V-AMP PRO and strike a string, the tuner tries to recognize the tone and shows it in the display. Because the tuner functions chromatically, it can also recognize semitones. These are shown in the display with a "b" accompanying the value.

However, it may be the case that that a played note (shown in the display as for example "a") slightly deviates from the ideal tone. This will be indicated by lighting up at least one of the four arrow LEDs at the lower edge of the display. When the note played lies between the deviations shown by means of the individual LEDs, two LEDs may light up. If the circular middle tuner LED lights up, the played note is identical to the note shown in the display.

7.2 Setting up the "a" reference tone

To put complete freedom at your disposal when tuning your instrument, you have the option to change the preset of the reference tone "a". Here is a quick intro to the subject.

The so-called "chamber tone a" has been continually revised upwards ever since it was first measured: tuning forks of Bach, Handel or Mozart were at 415, 420 or 421 Hz (vibrations pro second).

Nowadays, orchestra set the "a" with 444 Hz, and the Berlin Philcharmonic wishes to stay ahead still: their "chamber tone a" lies at a full 447 Hz.

The reference tone "a" of the BASS V-AMP/BASS V-AMP PRO is programmed at 440 Hz. Let's say, you want to work with a big orchestra that works with the chamber tone "a" set to 444 Hz. To activate the function that changes the chamber tone, do the following: activate the tuner by pressing the TUNER key and immediately switch over into the EDIT mode by simultaneous pressing both arrow keys. "40" appers in the display, which responds to 440 Hz. By pressing the arrow keys, you can adjust the "a" reference tone up or down in 1 Hz increments for a maximum of 15 Hz. The last two digits of the frequency value are always shown in the display, since the first digit is always a 4. For example, when you start with the 440 Hz basic tone, and then press the right arrow key four times, the display shows 44, which corresponds to a frequency of 444 Hz.

To quit the EDIT mode, press the TUNER key. Your changes are automatically stored. Ideal tones for the remaining strings are automatically set up using the newly adjusted frequency as a reference.

8. INSTALLATION

8.1 Rack mounting (BASS V-AMP PRO)

Your BEHRINGER BASS V-AMP PRO needs two rack units to be installed in a 19-inch rack. Please keep in mind that you need an extra 10 cm depth for accessing the cables running into the back.

Assure that appropriate ventilation is provided, and never position your BASS V-AMP PRO on top of an amp, for example, to avoid the danger of overheating the unit.

8.2 Voltage (BASS V-AMP PRO)

Before you connect your BASS V-AMP PRO to the mains, please check carefully if your unit is set to the correct voltage! The fuse mount near the power cord connector has three triangular markings. Two of these three triangles are facing opposite one another. Your BASS V-AMP PRO is set up for the voltage indicated near these markings, and can be altered by turning the fuse mount by 180 degrees. **ATTENTION: This does not apply to export models built for 120 V, for example!**

☞ **If you use the unit with a different voltage, you must change the fuses accordingly. The correct value of the fuses needed can be found in the chapter "SPECIFICATIONS."**

☞ **Faulty fuses must be replaced with fuses of appropriate rating without exception! The correct value of the fuses needed can be found in the chapter "SPECIFICATIONS."**

Power is delivered via the cable that was delivered with the unit. All requiered safety precautions have been adhered to.

☞ **Please make sure that the unit is grounded at all times. For your own protection, you should never tamper with the grounding of the cable or the unit itself.**

8.3 Audio connections

The input of the BEHRINGER BASS V-AMP/BASS V-AMP PRO is laid out as a mono 1/4" TS connector. Line Out, Aux In as well as headphones output are laid out as stereo 1/4" TRS connectors. Line outputs can be connected to both balanced and unbalanced jacks. The DI OUT connectors of the BASS V-AMP PRO are available as balanced XLR connectors. Digital outputs are available as a cinch connector (S/PDIF) and XLR connector (AES/ EBU). The BNC connector is used to feed in an external worldclock signal.

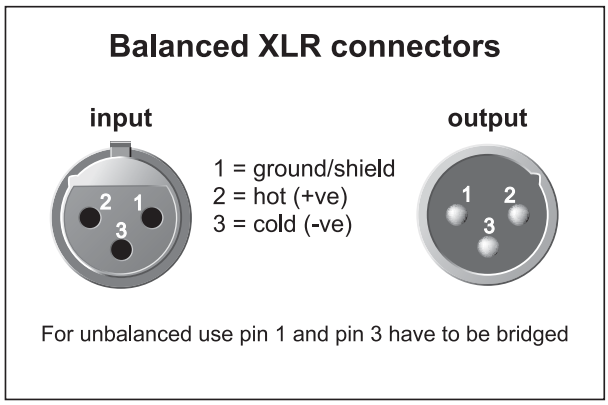

Fig. 8.1: XLR connections

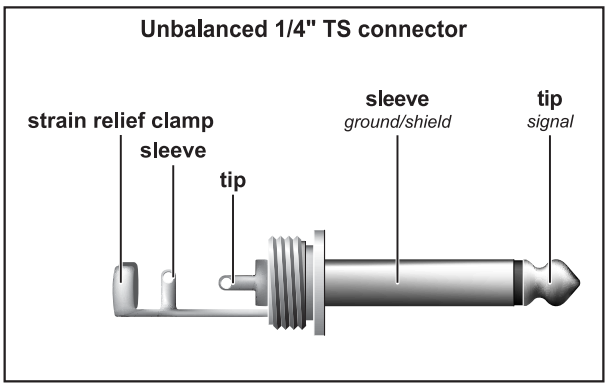

Fig. 8.2: 1/4" TS connector

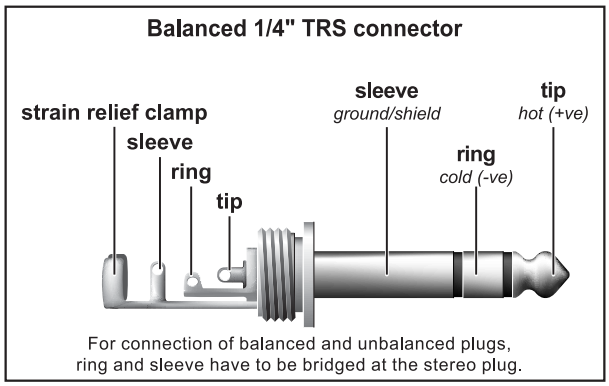

Fig. 8.3: 1/4" TRS connector

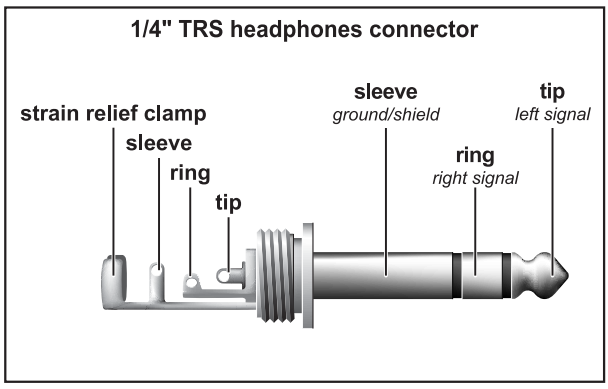

Fig. 8.4: Stereo headphones connector

8.4 MIDI connections

The MIDI standard (**M**usical **I**nstruments **D**igital **I**nterface) was first developed at the beginning of the ’80s, with the goal of enabling mutual communication between electronic instruments of various manufacturers. Over the years, the number of possible MIDI applications has increased substantially; nowadays, it is perfectly normal to connect entire studios via MIDI.

At the center of this network is a computer with a sequencing software, used to control not only keyboards but also effects processors and other peripheral equipment. In such a studio, you can control your BASS V-AMP/BASS V-AMP PRO in real time from a computer. Using a MIDI footswitch presents itself as a great idea, especially in live applications, because it allows you to control not only the effects but also selects the presets.

Your BASS V-AMP/BASS V-AMP PRO is equipped with standard 5-prong DIN MIDI connectors. To connect your unit with other MIDI equippment, you will need a MIDI cable. Pre-packed cables available at stores are usually used for this purpose.

MIDI IN: Used to receive MIDI control data. The MIDI channel is set up in EDIT mode by pressing the A key and subsequently using the arrow keys.

MIDI OUT/THRU: MIDI OUT lets you send data to another computer or another piece of MIDI equipment. Preset data as well as parameter changes are transmited. When you reroute the connector to MIDI THRU, your BASS V-AMP/BASS V-AMP PRO sends no MIDI data of its own; instead, it merely forwards the data received at MIDI IN (see chapter 2.1, 8 A).

8.4.1 Receiving/sending MIDI-Sysex data

The BASS V-AMP/BASS V-AMP PRO can receive a SysEx dump from another MIDI unit as long as MIDI function in EDIT mode is activated (A key). However, this also automatically overwrites all BASS V-AMP/BASS V-AMP PRO presets. You can also send MIDI data to another MIDI device (total dump). While in EDIT mode, keep the MIDI key pressed until you get “d” shown in the display. Sending a “total dump“ lets you transfer the entire memory contents to another MIDI sequencer and save it there.

It is also possible to send just one selected preset to another MIDI device: switch into EDIT mode by simultaneously pressing both arrow keys on the sending device, activate the MIDI function and tap the MIDI key briefly. Preset information are then located in the temporary buffer, and can be saved at a desired preset location.

8.5 AES/EBU and S/PDIF standards

In general, there are two different standards when the subject is digital signal processing. AES/EBU is the professional, balanced connection with XLR jack connectors. This interface is based on two identical protocols published in November 1985 by the **E**uropean **B**roadcast **U**nion (EBU Tech. 3250-E) and in December 1985 by the **A**udio **E**ngineering **S**ociety (AES3-1985). Sony and Philips oriented themselves around this standard and developed an additional interface with unbalanced signal routing and several important differences that primarily have to do with allocating channel status bits. This standard, named after the two companies (S/PDIF = Sony/Philips Digital Interface) uses either cinch jacks or a digital connection with optical cables. It is relevant mostly because of the attempt to introduce copy protection embedded in the IEC 958 norm. This norm describes both the re-worked AES/EBU interface that has been modified to work with the S/PDIF format and described as IEC 958 Typ I (Professional). The formal description of the S/PDIF interface is IEC 958 Typ II (Consumer).

9. SPECIFICATIONS

	BASS V-AMP	BASS V-AMP PRO
AUDIO INPUTS		
INSTRUMENT INPUT	1/4" TS connector, unbalanced	
Input impedance	1 MΩ	
Max. input level	+3 dBu	
AUX IN	1/4" TRS connector, balanced	-
Input impedance	50 kΩ	-
PRE DSP RETURN LINE IN	-	1/4" TS connector, unbalanced
Input impedance	-	45 kΩ
Max. input level	-	+9 dBu
POST DSP INSERT RETURN L/R	-	1/4" TS connector, unbalanced
Input impedance	-	40 kΩ
Max. input level	-	+8 dBu
AUDIO OUTPUTS		
ANALOG LINE OUTPUTS L/R	1/4" TS connectors, unbalanced	
Output impedance	approx. 680 Ω	
Max. output level	+20 dBu	
PRE DSP SEND/LINE OUT	-	1/4" TS connector, unbalanced
Output impedance	-	<1 kΩ
Max. output level	-	+9 dBu
POST DSP INSERT SEND L/R	-	1/4" TS connectors, unbalanced
Output impedance	-	1 kΩ
Max. output level	-	+8 dBu
BALANCED LINE OUT	-	XLR, balanced
Output impedance	-	100 Ω
Max. output level	-	+14 dBu (studio); 0 dBu (live)
HEADPHONES	1/4" TRS connector, unbalanced	
Max. output level	+15 dBu/100 Ω (+23 dBm)	
DIGITAL OUTPUTS		
XLR	-	transformer-balanced
Output impedance	-	110 Ω
Nom. output level	-	3,5 V peak-to-peak
RCA	-	not grounded, unbalanced
Output impedance	-	75 Ω
Nom. output level	-	0,5 V peak-to-peak
Format	-	AES/EBU bzw. S/PDIF, selectable
Sample rate	-	44,1/48/96 kHz internal; 32 - 96 kHz wordclock, sample rate converter
WORDCLOCK INPUT		
BNC	-	coaxial
Input impedance	-	50 kΩ
Nom. input level	-	2 - 6 V peak-to-peak
MIDI		
Type	5-pole DIN jacks IN, OUT/THRU	

BASS V-AMP/BASS V-AMP PRO

	BASS V-AMP	BASS V-AMP PRO
DIGITAL SIGNAL PROCESSING		
Converter	24-bit Delta-Sigma, 64/128-times oversampling	
Dynamics A/D	100 dB @ preamp bypass	
Dynamics D/A	92 dB	
Sample rate	31,250 kHz	
DSP	100 Mips	
Delay time	max. 1023 ms stereo/sampler delay: 15,36 s	
Run time (Line In → Line Out)	approx. 5 ms	
DISPLAY		
Type	2-digit 7-segment-LED display	
POWER SUPPLY		
Mains voltage	USA/Canada 120 V~, 60 Hz	USA/Canada 120 V~, 60 Hz
	U.K./Australia 240 V~, 50 Hz	Europe/U.K./Australia 230 V~, 50 Hz
	Europe 230 V~, 50 Hz	Japan 100 V~, 50 - 60 Hz
	Japan 100 V~, 50 - 60 Hz	General export model 120/230 V~, 50 - 60 Hz
Power consumption	13 W	15 W
Fuse	-	100 - 120 V~: **T 400 mA H**
	-	200 - 240 V~: **T 200 mA H**
Mains connection	external power supply	Standard IEC receptacle
DIMENSIONS/WEIGHT		
Dimensions (H x B x T)	63 x 236 x 180 mm	89 x 482,6 x 135 mm
	2 1/2" x 9 1/4" x 7 1/8"	3 1/2" x 19" x 5 1/4"
Weight	approx. 1,2 kg	approx. 2,6 kg
	approx. 2 3/4 lbs	approx. 5 3/4 lbs

BEHRINGER constantly strives to maintain the highest quality standards. Modifications may be made, if necessary, without prior notice. The specifications and appearance of the equipment may therefore differ from those listed or illustrated.

10. APPENDIX

Function	Transmitted	Received	Remarks
Midi Channel	Jan 16	Jan 16	
Note Number	N	Y	MIDI Bass Synth (ID 14) only
Velocity	N	N	
After Touch	N	N	
Pitch Bender	N	N	
Control Changes			
1	N (request only)	Y	Wah Pedal
7	N (request only)	Y	Volume Pedal
12	Y	Y	Amp Gain (0-127)
13	Y	Y	Amp Treble (0-127)
14	Y	Y	Amp Mid (0-127)
15	Y	Y	Amp Bass (0-127)
16	Y	Y	Amp Vol (0-127)
17	Y	Y	Presence (0-127)
18	Y	Y	Compressor Density (0-127)
19	Y (skipped on request)	Y	Amp Type (0-32) with default cabinet *3
20	Y (skipped on request)	Y	Fx Type (0-15) with defaults *1
21	Y	Y	Fx off/on (0/127)
22	Y	Y	Deep
23	Y	Y	Cabinet Type (0-23) *5
24	Y	Y	Mid Shift/Shape *2
25	Y	Y	Expander (0-15) *10
26	Y	Y	Compressor Speed (0-127)
27	Y	Y	Wah off/position (0/1-127)
28	Y	Y	X-over frequency *4(0-99)
29	Y	Y	X-over balance
30	Y	Y	Denoiser Sensitivity (0-127)
31	Y	Y	Denoiser Range (0-127) *11
33	Y	Y	Pedal simulation (0-4) *6
34	Y	Y	Pedal simulation Drive (0-127)
35	Y	Y	Pedal simulation Tone (0-127)
36	Y	Y	Pedal simulation Boost (0-127)
37	Y	Y	Pedal simulation Split (0-127) *12
39	Y	Y	post FX Mode (0-15) *7
40	Y	Y	post FX Par 1*7
41	Y	Y	post FX Par 2*7
42	Y	Y	post FX Par 3*7
43	Y	Y	post FX Par 4*7
44	Y	Y	post FX Par 5*7
45	Y	Y	post FX Par 6*7
46	Y	Y	post FX Par 7*7
48	Y	Y	pre FX Mode*9
49	Y	Y	pre FX Par 1*9
50	Y	Y	pre FX Par 2*9
51	Y	Y	pre FX Par 3*9
55	N	Y(if FX=Delay/Loop)	Sampler REC *8
56	N	Y(if FX=Delay/Loop)	Sampler PLAY *8
57	N	Y(if FX=Delay/Loop)	Sampler STOP *8
58	N	Y(if FX=Delay/Loop)	Sampler SPEED *8
59	N	Y(if FX=Delay/Loop)	Sampler REVERSE *8
60	N	Y(if FX=Delay/Loop)	Sampler PLAY ONCE *8
61	N (request only)	Y	Amp Type (0-32) w/o cabinet change
64	N	Y	Tap (Value > 63)
80	N	Y	Request Controls (Value = 80)
81	N (request only)	Y	Set Pos (0-15), Set Character (32-127)
82	Y	Y	Tuner Bypass Volume (0-127)
83	Y	Y	Tuner Center Frequency (25-55)
84	Y	Y	Configuration (0-5=S1,S2,S3,L1,L2,L3)
85	Y	Y	Live EQ Treble (0-127)
86	Y	Y	Live EQ Mid (0-127)
87	Y	Y	Live EQ Bass (0-127)
88	Y	Y	Digital Out (PRO model only) (44.1/48/96/ext., bit 2=pro)*13
89	Y	Y	Global Input Gain (0-127)
Program Change	Y (0-124)	Y (0-124,127)	127=Tuner
System Exclusive	Y	Y	see SysEx Documentation
System Common	N	N	
System Real Time	N	N	
Running Status	Y (2s Timeout)	Y	

Tab. 10.1: MIDI implementation

MIDI Controller	55	56	57	58	59	60
Function	REC	PLAY	STOP	SPEED	REVERSE	PLAY ONCE
Controller value	REC GAIN	PLAY GAIN	/	PLAY SPEED	DIRECTION	/
Range	0-127	0-127	/	0=off,1=half,2=normal	0=off,1=rew	/

Tab. 10.2: MIDI controllers of the delay/loop effect

11. WARRANTY

§ 1 WARRANTY CARD/ONLINE REGISTRATION

To be protected by the extended warranty, the buyer must complete and return the enclosed warranty card within 14 days of the date of purchase to BEHRINGER Spezielle Studiotechnik GmbH, in accordance with the conditions stipulated in § 3. Failure to return the card in due time (date as per postmark) will void any extended warranty claims. Based on the conditions herein, the buyer may also choose to use the online registration option via the Internet (www.behringer.com or www.behringer.de).

§ 2 WARRANTY

1. BEHRINGER (BEHRINGER Spezielle Studiotechnik GmbH including all BEHRINGER subsidiaries listed on the enclosed page, except BEHRINGER Japan) warrants the mechanical and electronic components of this product to be free of defects in material and workmanship for a period of one (1) year* from the original date of purchase, in accordance with the warranty regulations described below. If the product shows any defects within the specified warranty period that are not excluded from this warranty as described under § 3 and 4, BEHRINGER shall, at its discretion, either replace or repair the product using suitable new or reconditioned parts. In the case that other parts are used which constitute an improvement, BEHRINGER may, at its discretion, charge the customer for the additional cost of these parts.

2. If the warranty claim proves to be justified, the product will be returned to the user freight prepaid.

3. Warranty claims other than those indicated above are expressly excluded.

§ 3 RETURN AUTHORIZATION NUMBER

1. To obtain warranty service, the buyer (or his authorized dealer) must call BEHRINGER (see enclosed list) during normal business hours **BEFORE** returning the product. All inquiries must be accompanied by a description of the problem. BEHRINGER will then issue a return authorization number.

2. Subsequently, the product must be returned in its original shipping carton, together with the return authorization number to the address indicated by BEHRINGER.

3. Shipments without freight prepaid will not be accepted.

§ 4 WARRANTY REGULATIONS

1. Warranty services will be furnished only if the product is accompanied by a copy of the original retail dealer's invoice. Any product deemed eligible for repair or replacement by BEHRINGER under the terms of this warranty will be repaired or replaced within 30 days of receipt of the product at BEHRINGER.

2. If the product needs to be modified or adapted in order to comply with applicable technical or safety standards on a national or local level, in any country which is not the country for which the product was originally developed and manufactured, this modification/adaptation shall not be considered a defect in materials or workmanship. The warranty does not cover any such modification/adaptation, irrespective of whether it was carried out properly or not. Under the terms of this warranty, BEHRINGER shall not be held responsible for any cost resulting from such a modification/adaptation.

3. Free inspections and maintenance/repair work are expressly excluded from this warranty, in particular, if caused by improper handling of the product by the user. This also applies to defects caused by normal wear and tear, in particular, of faders, potentiometers, keys/buttons and similar parts.

4. Damages/defects caused by the following conditions are not covered by this warranty:

- ▲ improper handling, neglect or failure to operate the unit in compliance with the instructions given in BEHRINGER user or service manuals.
- ▲ connection or operation of the unit in any way that does not comply with the technical or safety regulations applicable in the country where the product is used.
- ▲ damages/defects caused by force majeure or any other condition that is beyond the control of BEHRINGER.

5. Any repair or opening of the unit carried out by unauthorized personnel (user included) will void the warranty.

6. If an inspection of the product by BEHRINGER shows that the defect in question is not covered by the warranty, the inspection costs are payable by the customer.

7. Products which do not meet the terms of this warranty will be repaired exclusively at the buyer's expense. BEHRINGER will inform the buyer of any such circumstance. If the buyer fails to submit a written repair order within 6 weeks after notification, BEHRINGER will return the unit C.O.D. with a separate invoice for freight and packing. Such costs will also be invoiced separately when the buyer has sent in a written repair order.

§ 5 WARRANTY TRANSFERABILITY

This warranty is extended exclusively to the original buyer (customer of retail dealer) and is not transferable to anyone who may subsequently purchase this product. No other person (retail dealer, etc.) shall be entitled to give any warranty promise on behalf of BEHRINGER.

§ 6 CLAIM FOR DAMAGES

Failure of BEHRINGER to provide proper warranty service shall not entitle the buyer to claim (consequential) damages. In no event shall the liability of BEHRINGER exceed the invoiced value of the product.

§ 7 OTHER WARRANTY RIGHTS AND NATIONAL LAW

1. This warranty does not exclude or limit the buyer's statutory rights provided by national law, in particular, any such rights against the seller that arise from a legally effective purchase contract.

2. The warranty regulations mentioned herein are applicable unless they constitute an infringement of national warranty law.

* Customers in the European Union please contact BEHRINGER Germany Support for further details.

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